

REMARKS

At the time of the Office Action dated February 12, 2007, claims 2-8, 10, and 12-21 were pending in this application. Applicants acknowledge, with appreciation, the Examiner's indication that claims 5-8 and 14-17 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants also acknowledge, with appreciation, the Examiner's indication that claims 10, 18, and 19 would be allowable if written or amended to overcome the rejection under 35 U.S.C. §112, second paragraph, discussed below.

In this Amendment, claims 4, 5, 6, 10, 14, 15, 18, 19, and 21 have been amended, and claims 2, 3, 12, and 13 canceled. Care has been exercised to avoid the introduction of new matter. Specifically, claims 5, 6, 14, and 15 have been amended to be in independent form. Claim 4 has been amended to be dependent on claim 5. Claims 10, 18, 19, and 21 have been amended to address the Examiner's rejection and objection, discussed below.

Information Disclosure Statement

Applicants note that the Information Disclosure Statement was filed on March 5, 2007. Applicants respectfully request the Examiner to acknowledge receipt of the IDS when reviewed and provide a copy of the PTO-1449 form appropriately initialed indicating consideration of the cited references.

Claim Objections

Objection has been made to claim 21. The Examiner requested claim 21 to be amended to include the word "first" before the term "conversion unit." Claim 21 has been amended in the manner suggested by the Examiner. Withdrawal of the objection is, therefore, respectfully solicited.

Specification

The title of the invention has been amended in the manner suggested by the Examiner. Withdrawal of the objection to the specification is, therefore, respectfully solicited.

Claims 10, 18, and 19 have been rejected under 35 U.S.C. §112, second paragraph.

Regarding claims 10 and 18, the Examiner pointed out that the word "can" is not a definitive limitation. Claims 10 and 18 has been amended to address the issues raised by the Examiner.

The Examiner stated that regarding the last paragraph of claims 10 and 19, if it is not clear what is meant by "transistors having different size ratios," or "having generally the same size ratio." In response, claims 10 and 19 have been amended to respond to the Examiner's questions.

Regarding claim 18, the Examiner stated that the recited limitations concerning the details of the driving unit are not described properly with respect to the drawings and the specification. Claim 18 has been amended to delete the limitations inadvertently added in the previous Amendment, in order to clarify the claimed subject matter.

Applicants believe that these amendments are fully responsive to the Examiner's concerns, and respectively solicit withdrawal of the rejection of claims 10, 18, and 19.

Claims 1 and 4 have been rejected under 35 U.S.C. §102 (b) as being anticipated by Stark et al.

The Examiner asserted that Stark et al. describes an impedance controlled output driver identically corresponding to what is claimed. Applicants presume that the Examiner intended to indicate that claims 2 and 4 have been rejected because claim 1 was already canceled.

This rejection has been rendered moot by the cancellation of claim 2 and the amendment of claim 4 to be dependent on allowable claim 5. Withdrawal of the rejection of claims 2 and 4 is, therefore, respectfully solicited.

Claim 3 has been rejected under 35 U.S.C. §102(e) as being anticipated by Kuge.

This rejection has also been rendered moot by the cancellation of claim 3. Withdrawal of the rejection of claim 3 is, therefore, respectfully solicited.

Claims 20 and 21 have been rejected under 35 U.S.C. §102(e) as being anticipated by Cusinato.

In the statement of the rejection, the Examiner asserted that Cusinato discloses a low power pipeline analog-to-digital converter identically corresponding to what is claimed. This rejection is respectfully traversed.

Applicants submit that Cusinato does not identically disclose a pipelined AD converter including all the limitations recited in independent claim 20. Specifically, the reference does not

disclose, among other things, “the control unit controlling the current driving capability so as to drive at least *any one of* the plurality of stages of conversion units with a *relatively high* current and drive the other conversion units with a *lower* current” (emphasis added).

Cusinato describes, “the circuit in Figs. 3 through 5 varies the bias current to the operational amplifier 46 between I_{\max} and I_{\min} during the operation of the circuit” (paragraph [0029]). However, Cusinato does not disclose providing bias current with the different magnitudes to the 1st stage to 5th stage, respectively. In contrast, claim 20 recites driving “at least *any one of* the plurality of stages of conversion units with a *relatively high* current and drive the other conversion units with a *lower* current” (emphasis added). Accordingly, Cusinato does not disclose the claimed control unit.

Based on the foregoing, Cusinato does not identically disclose a pipelined AD converter including all the limitations recited in independent claim 20. Dependent claim 21 is also patentably distinguishable over Cusinato at least because it includes all the limitations recited in independent claim 20. Applicants, therefore, respectfully solicit withdrawal of the rejection of claims 20 and 21 under 35 U.S.C. § 102(e), and favorable consideration thereof.

Claim 12 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Cusinato in view of Stark et al.; and claim 13 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Cusinato in view of Kuge.

These rejections have been rendered moot by the cancellation of claims 12 and 13. Withdrawal of the rejections of the claims is, therefore, respectively solicited.

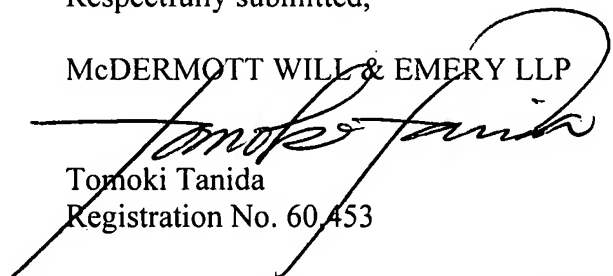
Conclusion

It should, therefore, be apparent that the imposed rejections have been overcome and that all pending claims are in condition for immediate allowance. Favorable consideration is, therefore, respectfully solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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